

# **Report on Reductions Achieved from Incentive-Based Emission Reduction Measures in the San Joaquin Valley**

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## I. OVERVIEW

In 2008, the Air Resource Board (ARB or Board) adopted a State Implementation Plan (SIP) for the San Joaquin Valley to attain the 15  $\mu\text{g}/\text{m}^3$  annual PM<sub>2.5</sub> standard (SJV PM<sub>2.5</sub> Plan). In 2011, ARB amended the SJV PM<sub>2.5</sub> Plan to reflect recently adopted ARB regulations and on November 9, 2011, the U.S. Environmental Protection Agency (U.S. EPA) approved the amended SJV PM<sub>2.5</sub> Plan. In the SJV PM<sub>2.5</sub> Plan, ARB committed to achieve the aggregate emission reductions necessary to reach the attainment emissions targets via ongoing reductions from the State's existing control program, new emission reduction measures described in the SIP, or alternative emission reduction measures including incentive programs. The purpose of this Report is to document the reductions that have been achieved from California incentive-based emission reduction measures pertaining to the SJV PM<sub>2.5</sub> Plan aggregate emission reduction commitment.

California's overall enforceable commitment in the SJV PM<sub>2.5</sub> Plan is to reach the level of emissions specified in the attainment demonstration for each precursor that contributes to formation of a pollutant. The total emission reductions necessary to fulfill that enforceable commitment equals the difference between emission levels in the relevant base year and the target emission levels required in the attainment year. The element of the plan for achieving the necessary emission reductions to attain a National Ambient Air Quality Standard (NAAQS or standard) is referred to as its "control strategy."

A control strategy may rely upon three methods of achieving the necessary emission reductions: ongoing reductions that occur each year through implementation of previously adopted control measures; a commitment to propose action on a specified list of new measures; and a commitment to achieve aggregate emission reductions through the adoption of new regulations, or alternative emission reduction measures including emission reductions from incentive programs.

The Clean Air Act (Act) directly provides for the use of economic incentives as a means states may use to reach attainment of air quality standards. (See Act sections 110(a)(2)(A) and 172(c)(6)). In broad terms, economic incentive programs use market-based strategies to encourage emission reductions from stationary, area, and/or mobile sources. U.S. EPA has actively encouraged states to utilize economic incentive programs as a means of achieving needed reductions in light of the increasing incremental cost associated with further emission reductions from stationary and mobile sources via traditional regulations. U.S. EPA guidelines specify that four "integrity elements" must be satisfied before reductions from an incentive-based emission reduction measure may be credited towards meeting a SIP commitment. Specifically, creditable emission reductions must be enforceable, quantifiable, surplus, and permanent.

A combined strategy based on reductions from both regulations and incentive-based emission reduction measures is critical to California's continued effort to attain the

standards. Implementation of the SJV PM2.5 Plan has led to the adoption of Statewide rules and regulations as well as San Joaquin Valley Air Pollution Control District (District) rules that have achieved significant emission reductions in the San Joaquin Valley. These rules and regulations have been approved by U.S. EPA as part of meeting ARB's SIP commitment. ARB has also allocated funding for incentive programs in the San Joaquin Valley that accelerate the purchase of cleaner technologies beyond those achieved by regulations alone. Specifically these are the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program) and Proposition 1B: Goods Movement Emission Reduction Program (Prop 1B).

This Report quantifies the ARB and District-administered emission reductions from Moyer Program off-road equipment repower, replacement, and retrofit projects using 2005, 2008, and 2011 Moyer Program Guidance; portable and stationary agricultural source projects using 2005, 2008, and 2011 Moyer Program Guidance; and on-road vehicle replacement projects using 2008 and 2010 Prop 1B Guidelines, that provide emission reductions throughout the 2014 attainment year in the SJV PM2.5 Plan. The report also demonstrates how the reductions meet U.S. EPA requirements for credit toward fulfilling the aggregate emission reductions commitment in the SJV PM2.5 Plan. If approved by the Board, this Report on reductions achieved from incentive-based emission reduction measures in the San Joaquin Valley will be submitted to U.S. EPA for inclusion in the California SIP.

The sections below provide background on ARB incentive programs, a discussion of the U.S. EPA integrity elements that need to be satisfied to ensure that the incentive-based emission reduction measures are SIP creditable, and a corresponding demonstration for each project type. Finally, the Report identifies the total emission reductions from these incentive-based emission reduction measures to be credited towards the State aggregate commitment in the San Joaquin Valley. The appendices include the relevant incentive program guidelines, Moyer Program and Prop 1B integrity demonstrations, and the list of projects that provide the emission reductions from incentive-based emission reduction measures in the San Joaquin Valley.

## **II. ARB INCENTIVE PROGRAMS BACKGROUND**

Measures adopted by ARB and the District as part of implementing the SJV PM2.5 Plan have significantly reduced emissions in the San Joaquin Valley. These reductions are the result of ARB's long-standing mobile source control program, along with more recent measures such as the Truck and Bus Regulation, the In-Use Off-Road Diesel Vehicle Regulation, and District stationary source control measures. While the benefits of these measures are significant, reductions from incentive-based emission reduction measures are also critical to continue reducing emissions in the San Joaquin Valley.

Incentive programs achieve emission reductions beyond those required by regulations by providing grants to private and public entities for the introduction of cleaner technologies earlier than what is required by regulation alone. California has made a substantial investment in incentive programs for the last 15 years. The Moyer Program

and Prop 1B are two key incentive programs that achieve quantifiable emission reductions throughout the State and in the San Joaquin Valley.

To date, the Moyer Program has provided more than \$900 million that has been used to replace over 41,000 highly polluting engines throughout the State. Cumulatively, the Moyer Program has reduced approximately 150,000 tons of ozone precursor and 6,300 tons of particulate matter emissions. Local districts direct the money to cost effective projects specific to their district. In the 2014/15 fiscal year, \$12 million will be available for Moyer Program projects in the San Joaquin Valley. More information regarding the Moyer Program can be found at <http://www.arb.ca.gov/msprog/moyer/moyer.htm>, including program guidelines and air district implementation information.

Prop 1B is a partnership between ARB and agencies (such as air districts and seaports) to reduce air pollution emissions and health risk from freight movement along California's trade corridors. ARB has awarded \$718 million over multiple fiscal years to nine local agencies who are impacted by freight movement. In the 2013/14 fiscal year, approximately \$32 million is available for Prop 1B projects in the San Joaquin Valley. The Prop 1B Goods Movement Program Guidelines for Implementation requires local agencies to identify and implement mechanisms for the public to provide input to the local agency on the equipment project solicitations, and to post the competitively ranked list of equipment projects on the local agency website. More information regarding Prop 1B, including semi-annual reports to the Department of Finance (DOF), can be found at <http://www.arb.ca.gov/bonds/gmbond/gmbond.htm>.

Funds are allocated for incentive programs through a public process. ARB works collaboratively with the air districts and other stakeholders to develop funding guidelines for the Moyer Program and Prop 1B incentive program. To allow for public review and comment, ARB publishes proposed guidelines, holds public workshops, and adopts the guidelines at a public hearing. Both sets of guidelines have been adopted or approved by the ARB. The District administers the Moyer Program and Prop 1B incentive funds allocated to the San Joaquin Valley. Through a public process, following ARB adopted guidelines, the District selects and funds emission reduction projects. ARB program guidelines are included in this Report as Appendices A through E and the District's Manual of Procedures for incentive programs can be found at [http://www.valleyair.org/MOP/mop9610\\_idx.htm](http://www.valleyair.org/MOP/mop9610_idx.htm).

The Moyer Program and Prop 1B incentive programs have been developed around several core principles, including cost-effectiveness, integrity, effective program administration, customer service, efficient use of District resources, fiscal transparency, and public accountability. In general, for each applicant, the District reviews the application, conducts a pre-inspection, and obtains usage documentation prior to signing a contract. Once the engine/vehicle is purchased and/or installed, the District conducts a post inspection and subsequently confirms that the old engine/vehicle has been destroyed. Throughout the contract life, the grantee is required to report to the District on the usage of the engine/vehicle.

To ensure public funds are spent appropriately and as intended, the District incentive program is regularly audited by outside agencies, including professional accountancy corporations on behalf of the federal government, ARB, DOF, and the California Bureau of State Audits. These comprehensive independent audits focus on every aspect of District-administered incentive programs, including internal programmatic and fiscal policies and procedures as well as field validation of projects.

On June 20, 2013, the District adopted *Rule 9610: State Implementation Plan Credit for Emission Reductions Generated through Incentive Programs* (Rule 9610). Rule 9610 provides an administrative mechanism for the District to quantify emission reductions achieved through incentive programs administered by the District. Rule 9610 also requires that the District prepare and submit to ARB, through a public process, an Annual Demonstration Report that demonstrates the quantity of SIP-creditable emission reductions.

### **III. U.S. EPA PROGRAM REQUIREMENTS**

According to U.S. EPA guidelines, there are four necessary elements to demonstrate the integrity of incentive programs that are to be credited as achieving emission reductions towards a SIP – the reductions from these programs must be enforceable, quantifiable, surplus, and permanent.<sup>1</sup> These integrity elements are defined below.

**Enforceable:** Emission reductions and/or required actions are enforceable if they are independently verifiable and practically enforceable consistent with U.S. EPA guidance; program violations are defined; those liable can be identified; the state or U.S. EPA may apply penalties and secure corrective action where applicable; citizens have access to all emissions-related information obtained from participating sources.

**Quantifiable:** To show that emission reductions from these incentive programs are quantifiable, the emission reductions must be measured in a reliable manner that can be replicated.

**Surplus:** Emission reductions are surplus when they are not otherwise required by or assumed in a SIP-related program (e.g., an attainment or reasonable further progress plan or a transportation conformity demonstration), any other adopted state/local air quality program, a consent decree, or a federal rule designed to reduce criteria pollutant or precursor emissions. Also, emission reductions are “surplus” only for the remaining useful life of the vehicle, engine or equipment being replaced.

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<sup>1</sup> See “Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans (SIPs),” October 24, 1997, at pages 6-7; “Improving Air Quality with Economic Incentive Programs,” January 2001 at Section 4.1; “Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP),” September 2004 at pages 3-4; and “Diesel Retrofits: Quantifying and Using Their Emission Benefits in SIPs and Conformity,” February 2014 at pages 27-29.



Permanent: Emission reductions from incentive programs are permanent if the State and U.S. EPA can ensure that emission reductions occur for as long as they are relied upon in the SIP, and no longer than the remaining useful life of the vehicle, engine or equipment being replaced.

#### **IV. DEMONSTRATION THAT INCENTIVE-BASED EMISSION REDUCTION MEASURES MEET U.S. EPA REQUIREMENTS**

This section includes the integrity demonstration for the Moyer Program off-road equipment repower, replacement, and retrofit projects using 2005, 2008, and 2011 Moyer Program Guidelines, portable and stationary agricultural source projects using 2005, 2008, and 2011 Moyer Program Guidance and on-road vehicle replacement projects using 2008 and 2010 Prop 1B Guidelines as incentive-based emission reduction measures. All project types satisfy the U.S. EPA integrity element demonstrations, therefore emission reductions achieved through these projects are SIP creditable. Appendices F and G contain the Moyer Integrity Demonstration, as of December 31, 2013, and the Prop 1B Integrity Demonstration, as of August 2013, respectively.

##### ***A. General Moyer Program Requirements***

The Moyer Program funds the incremental cost of cleaner-than-required sources of air pollution (e.g. diesel engines) and has provided over \$900 million in State and local funds to reduce emissions from over 41,000 engines in its first 15 years. ARB adopted the first set of Moyer Program Guidelines in early 1999, and legislation (Assembly Bill (AB) 1571) enacted in 1999 formally established the statutory framework for the program (Health & Safety Code § 44275, et seq.). Multiple changes have been made since the original guidelines were developed, and ARB continues to update the program guidelines, following public processes, in response to legislative and regulatory changes and to ensure that emission reductions funded through the Moyer Program are “real, surplus, quantifiable, and enforceable” consistent with the underlying statutory mandates. ARB is required to make proposed changes to the Guidelines available to the public at least 45 days prior to final adoption and is required to hold one public meeting to consider public comments before final adoption of any changes. The Moyer Program is implemented through a partnership between ARB and local air districts. ARB manages program funds and distributes them to participating air districts for program implementation each year; develops and revises guidelines, protocols, and criteria for covered projects; and determines methodologies used for evaluating project cost-effectiveness. Air districts follow the Moyer Program Guidelines to select, fund, and monitor projects in their areas. The Guidelines describe requirements for administrative procedures, eligibility criteria for projects in different source categories, cost-effectiveness criteria, and reporting practices.

The following discussion will show how the 2005, 2008 and 2011 Moyer Program Guidelines meet the four integrity elements.

## General Moyer Program Enforceable

Specific funding criteria established in the Moyer Program Guidelines help ensure that emission reductions sought for projects funded according to the guidelines will be independently verifiable and practicably enforceable by ARB and the District consistent with U.S. EPA policy. In order for projects to be considered for funding, a complete application must be submitted by the applicant to the District. The requirements for the applications are in:

- 2008 Moyer Program Guidelines, Part III, *Minimum Project Application Requirements* at 29
- 2011 Moyer Program Guidelines, Part I, *Minimum Project Application Requirements* at 3-26

These sections require that “information regarding previous years of existing engine usage (e.g. miles traveled, hours operated, or fuel consumed per year) must be documented and included in the project application.” These sections also specify that minimum annual usage is not required to be included in the contract for projects which have 24 months of verified and documented historical usage. In addition, the applicant is required to certify that the information provided in the application is accurate and correct. See 2008 Moyer Program Guidelines, Part III, Section 26(e)(5) at 31; 2011 Moyer Program Guidelines, Section W.5 at 3-26. In contrast with the 2008 and 2011 Moyer Program Guidelines which have compiled application requirements into the *Minimum Project Application Requirements* section, the minimum application requirement for the 2005 Moyer Program Guidelines are included in the project criteria chapters and are discussed in the project type specific sections below.

Once the District has selected a project for funding through the Moyer Program, the District must execute contracts with the grantees who will receive funds under the Moyer Program. The requirements for these contracts, which are legally enforceable by ARB or the District, are in:

- 2005 Moyer Program Guidelines, Part I, *Minimum Contract Requirements* at II-28
- 2008 Moyer Program Guidelines, Part III, *Minimum Contract Requirements* at 34
- 2011 Moyer Program Guidelines, Part I, *Minimum Contract Requirements* at 3-31

Per these provisions, each equipment project contract must include: (1) the name and contact information of the grantee; (2) specified timeframes for “project completion” (the date the project post-inspection confirms that the project has become operational) and “project implementation” (the project life used in the project cost-effectiveness calculation); (3) detailed documentation adequate to establish historical annual usage; (4) requirements for the grantee to maintain the vehicle, equipment and/or engine according to the manufacturer’s specifications for the life of the project; (5) annual reporting requirements; (6) a provision authorizing the District, ARB, and their designees to conduct fiscal audits and to inspect the project engine, vehicle, and/or equipment and associated records during the contract term, and (7) requirements to maintain and retain project records for at least two years after contract expiration or

three years after final project payment, whichever is later. These requirements ensure that projects are carried out as anticipated, provide the District, ARB and the public with data needed to verify the project emission reductions and help ensure that violations can be identified. Contract non-performance is included in the above sections regarding minimum contract requirements with more details of actions towards non-performing projects included in:

- 2005 Moyer Program Guidelines, Part I, *Repercussions for Nonperformance* at II-32
- 2008 Moyer Program Guidelines, Part III, *Repercussions for Nonperformance* at 36
- 2011 Moyer Program Guidelines, Part I, *Repercussions for Nonperformance* at 3-44

Provisions in this section of the 2011 Moyer Program Guidelines specify some of the actions that would constitute a breach of contract as well as penalties and appropriate corrective actions for non-performance, including cancellation of the contract and recovery of all or a portion of Moyer Program funds. The 2005 and 2008 Moyer Program Guidelines do not specify repercussions for noncompliance but state that the contracts must include these types of stipulations.

Pre- and post-inspections are also required for funded projects, further ensuring the emission reductions are verifiable. This requirement ensures information provided by the project owner is consistent with actual operating equipment and that the existing equipment is in working condition. Additional requirements for pre-inspections including verification of usage and requirements for photographic confirmation of the equipment are in:

- 2005 Moyer Program Guidelines, Part I, *Pre-Inspection* at II-35
- 2008 Moyer Program Guidelines, Part III, *Pre-Inspection* at 37
- 2011 Moyer Program Guidelines, Part I, *Pre-Inspection* at 3-38

Additional requirements for post-inspections including photographic confirmation of the new equipment are in:

- 2005 Moyer Program Guidelines, Part I, *Post-Inspection* at II-35
- 2008 Moyer Program Guidelines, Part III, *Post-Inspection* at 39
- 2011 Moyer Program Guidelines, Part I, *Post-Inspection* at 3-38

In general, the application, contracting, and inspection requirements are sufficient to ensure that projects funded following Moyer Program Guidelines are independently verifiable and enforceable by ARB and the District. Additional requirements specific to each project type and how they help ensure the integrity criteria for enforceability when combined with the requirements discussed in this section are discussed later.

#### General Moyer Program Quantifiable

Appendix C of the 2005, 2008, and 2011 Moyer Program Guidelines contains the formulas used to determine annual emissions and annual emission reductions based on

activity data, including options for using hours of operation, fuel consumption and miles traveled to determine annual usage. In general emission reductions are calculated by taking the difference between the emissions of a baseline technology and a reduced technology. The baseline technology is an engine certified by ARB to the current emission standards for new purchases or the existing engine in a vehicle or equipment for repowers, replacements and retrofits. The reduced technology is generally one of the following:

- For a new purchase, the reduced technology is an engine certified by ARB to reduce NOx emissions by at least 30 percent less than the current NOx emission standard, or certified by ARB to the optional NOx or NOx + NMHC emission standard.
- For a repower, the reduced technology is the replacement engine certified by ARB to at least 15 percent less than the NOx emissions from the baseline technology.
- For a NOx retrofit, the reduced technology is an ARB-verified retrofit technology that reduced NOx emissions by at least 15 percent from the NOx emissions of the baseline technology.
- For a PM retrofit, the reduced technology is the ARB-verified diesel emission control strategy that reduced PM emissions to the appropriate level depending on the specific project types.

The following sections of the Moyer Program Guidelines have tables containing data needed to calculate the emission reductions of projects using formulas in Appendix C:

- 2005 and 2008 Program Moyer Guidelines, Part IV, *Tables for Emission Reduction and Cost-Effectiveness Calculations* at B-1
- 2011 Moyer Program Guidelines, Part 1, *Tables for Emission Reduction and Cost-Effectiveness Calculations* at D-1

Included are data such as engine emission factors, load factors, and other conversion factors used in the calculations described in Appendix C. Along with activity data required to be reported by the Moyer Program Guideline sections discussed above in the “General Moyer Program Enforceable” section, these appendices allow for the quantification of emissions and emission reductions. Appendix B of the 2005 Moyer Program Guidelines states that “the emission factors in the tables reflect preliminary data on emission rates developed by ARB staff as part of a comprehensive effort to update the emissions models used for on-road motor vehicle and off-road mobile sources.” This Appendix also clarifies that the draft data were made available on ARB’s website in early 2005, but were subject to change as staff completed their analyses. See 2005 Moyer Program Guidelines, Part IV, Appendix B at B-1. Some of the specific project guidelines for the 2008 and 2011 Moyer Program Guidelines indicate the source of the data in the Tables in Appendix B and D, respectively, and will be discussed below when specified. Additional requirements specific to each project type and how they help ensure the reductions are quantifiable when combined with the requirements discussed in the section are addressed later.

## General Moyer Program Surplus

Emission reductions are surplus if they are not required by other regulations or legal mandates. The Moyer Program Guidelines specify that emission reductions cannot be required by any federal, State, or local regulations, memorandum of agreement/understanding, settlement agreement, mitigation requirements, or other legal mandate in order for the project to be funded. See:

- 2005 Moyer Program Guidelines, Part I, Section VIII.D at II-31
- 2008 Moyer Program Guidelines, Part III, Section (a) at II-1
- 2011 Moyer Program Guidelines, Part I, Section A at 2-1

The 2008 and 2011 Moyer Program Guidelines also state that “rule approval date (or the promulgation date of a federal regulation) represents the cutoff date by which a Moyer Program project contract must be fully executed, without needing to consider the rule in evaluating the surplus nature of the project emission reductions. After that date, the new rule must be considered in the evaluation of a project’s eligibility.” See 2008 Moyer Program Guidelines, Part I, Section (b) at II-1 and 2011 Moyer Program Guidelines, Part 1, Section B at 2-1.

Recordkeeping and reporting requirements described above in the “General Moyer Program Enforceable” and “General Moyer Program Quantifiable” sections ensure that historic and current emission estimates correctly represent emissions occurring in the San Joaquin Valley. Pre-inspection requirements described in the “General Moyer Program Enforceable” section ensure that the unit to be replaced is still in useable form and thus would not have been replaced by normal fleet turnover. These requirements ensure that emission reductions from normal fleet turnover are not treated as surplus.

Additional requirements specific to each project type and how they ensure the integrity criteria for surplus when combined with the requirements discussed in this section are discussed later.

## General Moyer Program Permanent

The Moyer Program requires that the old engine be destroyed and that the destruction is verified to ensure old equipment is not reused and that the emission reductions are permanent. See 2005 Moyer Program guidelines, Part I, Section IX.B at II-36; 2008 Moyer Program Guidelines, Part III, Section 31(c) at 41; and 2011 Moyer Program guidelines, Part 1, Section BB at 3-38.

The Moyer Program Guidelines also require that each contract executed with a grantee identify a “contract term” which must include two time frames as discussed in the “General Moyer Program Enforceable” section - “project completion” and “project implementation” - to ensure that the District and ARB can fully enforce the contract during the life of the Moyer Program-funded project.

- 2005 Moyer Program Guidelines, Part I, *Contract Term* at II-29
- 2008 Moyer Program Guidelines, Part III, *Contract Term* at 35

- 2011 Moyer Program Guidelines, Part I, *Contract Term* at 3-32

These sections specify that the contract must include language stating that the grantee is required to operate and maintain their funded projects, be it the repowered engines, the equipment retrofit or the new engine, for the full project implementation period ensuring that the emission reductions quantified are occurring throughout the project life. These contract provisions enable U.S. EPA and the public to evaluate the duration for which ARB attributes emission reductions to a particular project and to determine whether that duration adequately covers the period for which the reductions are relied upon in a SIP.

Additional requirements specific to each project type and how they help ensure the permanence of the emission reductions when combined with the requirements discussed in this section are discussed later.

## ***B. Moyer Program Off-Road Equipment: Repower, Replacement or Retrofit***

### **Applicable guidelines:**

- 2005 Moyer Program Guidelines, Part II, Chapter 5, *Compression-Ignition Off-Road Equipment*
- 2008 Moyer Program Guidelines, Part I, Chapter 5, *Off-Road Compression-Ignition Equipment*
- 2011 Moyer Program Guidelines, Part 1, Chapter 7, *Off-Road Compression-Ignition Equipment*

**Duration of Emission Reductions:** Emission reductions must span the entire 2014 calendar year.

### **Background:**

The project types include off-road equipment construction repower and retrofit along with off-road equipment mobile agricultural repower, replacement, and retrofit.

### **Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Enforceable**

Chapter 5 of the 2005 Moyer Program Guidelines states that the “contract term must extend to the end of the project life.” See 2005 Moyer Program Guidelines, Part II, Section V.A. at V-9. In addition, Table 5-3 contains all information that the applicant must submit in a project application to be eligible for funding. The required information includes information about the baseline and replacement technologies, information about the vehicle activity and information about the applicant. This chapter also requires a functioning hour meter to support equipment activity data included in the application. See 2005 Moyer Program Guidelines, Part II, Section VI page V-13.

Chapter 5 of the 2008 guidelines, which covers the repower and retrofit projects, requires historical hours of operation be based on the average of the two previous years’ use or that two years of historical fuel usage documentation be used to determine

historical fuel usage for calculations based on fuel. See 2008 Moyer Program Guidelines, Part I, Section IV. (a)(4) at V-3. Chapter 5 also requires that “future annual hours of equipment operation for determining emission reductions must be based only on readings from an installed and fully operational hour meter.” See 2008 Moyer Program Guidelines, Part I, Section IV.(a)(5) at V-3.

Chapter 7 of the 2011 Moyer Program Guidelines which covers repower and retrofit projects, also requires that project emission reductions be based upon readings from an installed and fully operational hour meter, or alternatively, if fuel usage is used, then future annual fuel usage must be based on fuel logs, purchase receipts, or ledger entries specific to the funded equipment. See 2011 Moyer Program Guidelines, Part I, Section D.1.(I) at 7-6.

Chapter 9 of the 2011 Moyer Program Guidelines covers the repowers of off-road compression ignition projects, also requires that the grantee demonstrate that it owned and operated the old equipment in California for the previous two years (see 2011 Moyer Program Guidelines, Part I, Section C.2(E) at 9-4). To verify the usage of the new equipment, the Moyer Program Guidelines require that new replacement equipment have an installed and fully operational hour meter or that fuel logs or purchase receipts of fuel be kept. See 2011 Moyer Program Guidelines, Part I, Section C.3.(I) at 9-9.

The requirement in the “General Moyer Program Enforceable” section above, along with the requirements that activity be reported, to different degrees depending on the guideline year as described above for the 2005, 2008, and 2011 Moyer Program Guidelines, help ensure the integrity criterion for enforceability for projects funded under these guidelines.

#### Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Quantifiable

Tables B-12 and B-13 in Appendix B of the 2005 Moyer Program Guidelines have the emission and load factors necessary to calculate the emission reductions using the equations in Appendix C. According to Chapter 5 of the 2005 Moyer Program Guidelines, the emission factors “reflect preliminary emission data based on model input values to the OFFROAD emission inventory model for engines greater than or equal to 25 hp.” See 2005 Moyer Program Guidelines, Part II, Section VI at V-13.

Tables B-11 through B-13 in Appendix B of the 2008 Moyer Program Guidelines have the necessary emission and load factors to calculate the emission reductions using the equations in Appendix C.

Tables D-10 through D-12 in Appendix D of the 2011 Moyer Program Guidelines have the necessary emission and load factors to calculate the emission reductions using the equations in Appendix C. The certification emission standards and Tier designation for the engine used to calculate emission reductions must be determined from engine

emission standards adopted by ARB and U.S. EPA through a public process. See 2011 Moyer Program Guidelines, Part 1, Section D.1.(C) at 7-5.

All three guidelines require documented activity levels be used along with the above discussed data and equations to calculate the emission reductions as discussed in the “Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Enforceable” section.

The information discussed in the section, along with that discussed in the “General Moyer Program Quantifiable” section provide for well-established, publicly available emission factors and calculation methods and require that grantees record and annually report activity data to the District. The 2005, 2008, and 2011 Moyer Program Guidelines ensure that emission reductions from Off-Road Compression-Ignition projects funded through these guidelines can be determined using reliable and replicable methods. The provisions are adequate to meet the criterion for emissions reductions to be “quantifiable” as defined by U.S. EPA guidance.

#### Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Surplus

Chapter 5 of the 2005 Moyer Program Guidelines specify that emission reductions generated through projects may not be required by any federal, State, or local regulation, memorandum of agreement/understanding with a regulatory agency, settlement agreement, mitigation requirement, or other legal mandate. See 2005 Moyer Program Guidelines, Part II, Section V.A at V-8. Table 5-2 includes the federal and California emission standards that would preclude engines from being surplus if they are subject to these.

Section III of Chapter 5 of the 2008 Moyer Program Guidelines lists regulations and emission standards that were in place at the time of guideline adoption which would preclude engines from being surplus if the engines are subject to these regulations. See 2008 Moyer Program Guidelines, Part I, Section II at V-2.

For replacement projects, the 2008 Moyer Program Guidelines require that the replacement equipment be functionally equivalent to replaced equipment to help ensure that new equipment is surplus. For projects that replace two or more pieces of old, like equipment with one piece of replacement equipment, the 2008 Moyer Program Guidelines require that the replacement equipment must execute the same job as the old pieces of equipment. For baseline emissions in this scenario, the annual emissions of the two pieces of old equipment are summed. See 2008 Moyer Program Guidelines, Part I, Section IV.(b)(5) at VII-6. Additionally, the 2008 Moyer Program Guidelines require that replacement equipment serve the same function and perform the same work equivalent to the old equipment (see 2008 Moyer Program Guidelines, Part I, Section IV.(c)(2) at VII-7) and the horsepower (hp) rating for the replacement equipment engine not be greater than 125 percent of the baseline horsepower for the old equipment engine (see 2008 Moyer Program Guidelines, Part I, Section IV.(c)(4) at VII-7).



Chapter 7 of the 2011 Moyer Program Guidelines mandates that emission reductions achieved from funded projects cannot count towards a fleet's regulatory requirements for the duration of the project life. See 2011 Moyer Program Guidelines, Part I, Section E.2 at 7-10. If subject to this regulation, the guidelines require that the grantee submit data to determine if old equipment or equipment to be repowered is in compliance with the Off-Road In-Use regulations reporting system. See 2011 Moyer Program Guidelines, Part I, Section E.1 at 7-10. Additionally, Sections E.4 through E.6 specify years through which funding is available based on the compliance deadline in the In-Use Off-Road Diesel Regulation.

Similarly to the 2008 Moyer Program Guidelines, Chapter 9 of the 2011 Moyer Program Guidelines requires that the replacement equipment is functionally equivalent to new equipment to help ensure that new equipment is surplus. The guidelines require that replacement equipment serve the same function and perform the same work as the old equipment (see 2011 Moyer Program Guidelines, Part I, Section C.3.(B) at 9-7) and documentation must be provided to verify this (see 2011 Moyer Program Guidelines, Part I, Section C.3.(D) at 9-7). Additionally, the guidelines require that the horsepower rating for the replacement engine not be greater than 125 percent of the original manufacturer rated hp (baseline hp) for the old (existing) equipment engine (see 2011 Moyer Program Guidelines, Part I, Section C.3.(D) at 9-7). These requirements are designed to ensure that the new equipment is replacing an existing (higher-polluting) piece of equipment that is currently being used, instead of expanding a fleet.

For projects subject to the ARB In-Use Off-Road Road Diesel Regulation, Chapter 9 specifies that "no emission reductions achieved from a funded program can count towards a fleet's regulation requirements for the duration of the project life." See Moyer Program Guidelines, Part 1, Section C.7.(C) at 9-16. If subject to this regulation, the guidelines require that the grantee submit data to determine if old equipment or equipment to be repowered is registered in the Off-Road In-Use Regulation reporting system. See 2011 Moyer Program Guidelines, Part 1, Section C.2.(D) at 9-4. Additionally, Sections C.7.(E) through C.7.(G) specify years through which funding is available based on the compliance deadline in the In-Use Off-Road Diesel Regulation.

The requirements discussed in the section, along with that discussed in the "General Moyer Program Surplus" help ensure the integrity criterion for surplus for projects funded under these guidelines.

#### Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Permanent

Chapter 5 of the 2008 Moyer Program Guidelines requires that engines replaced as part of an off-road repower be destroyed. See 2008 Moyer Program Guidelines, Part I, Section IV.(a)(11) at V-8. Chapter 7 of the 2008 Moyer Program Guidelines requires that old equipment be destroyed within 60 days of being replaced and that the District

do a salvage inspection. See 2008 Moyer Program Guidelines, Part I, Section D.4.(C) at 9-11.

Similarly to the 2008 Moyer Program Guidelines, Chapter 7 of the 2011 Moyer Program Guidelines requires that engines replaced as part of an off-road repower project be destroyed and rendered useless. See 2011 Moyer Program Guidelines, Part I, Section D.2.(I) at 7-9. Also following the requirements of the 2008 Moyer Program Guidelines, Chapter 9 of the 2011 Moyer Program Guidelines requires that the old equipment be destroyed within 60 days of being replaced. See 2011 Moyer Program Guidelines, Part I, Section D.4.(C) at 9-11.

Recordkeeping and reporting requirements for the replacement projects discussed in the “Moyer Program Off-Road Equipment Repower, Replacement, and Retrofit Enforceable” section above (e.g., the requirement that the grantee demonstrate that it owned and operated the old equipment in California for the previous two years) provide further documentation of the emission reductions from an off-road compression ignition replacement project.

The requirements discussed in the “General Moyer Program Permanent” section above is sufficient to help ensure that the emission reductions generated through Off-Road Equipment Repower, Replacement and Retrofit projects funded under the 2005, 2008, and 2011 Moyer Program Guidelines are “permanent” as defined by U.S. EPA guidance.

**Conclusion:** Relevant portions of 2008 and 2011 Moyer Program Guidelines establish clear criteria that enable ARB to: (1) quantify the emission reductions attributed to specific projects with a reasonable level of accuracy; (2) verify that those emission reductions are “surplus” to federal/State requirements and other legal mandates; (3) enforce the conditions of program grants to ensure that contracted emission reductions are achieved; and (4) monitor the continuing implementation of program grants to ensure that emission reductions are “permanent” throughout the life of each project.

### ***C. Moyer Program Portable and Stationary Agricultural Source Repower Projects***

#### **Applicable guidelines:**

- 2005 Moyer Program Guidelines, Part II, Chapter 10, *Agricultural Sources*
- 2008 Moyer Program Guidelines, Part I, Chapter 10, *Agricultural Sources*
- 2011 Moyer Program Guidelines, Part I, Chapter 10, *Portable and Stationary Agricultural Sources*

**Duration of Emission Reductions:** Emission reductions must span the entire 2014 calendar year.

#### **Background:**

The project types include stationary and portable agricultural engine repowers.

### Moyer Program Portable and Stationary Agricultural Sources Repower Enforceable

ARB requires the use of an hour-based formula for Portable and Stationary Agricultural Sources Repower projects; a fuel-based formula can be used if two years of historical fuel logs or purchase receipt documentation are provided by the grantee. See 2008 Moyer Program Guidelines, Part I, Section IV.(a).(8) at X-5, 2011 Moyer Program Guidelines, Part 1, Section C.1.(E) at 10-3. To verify the usage of the new equipment, the guidelines require that future annual hours of equipment operation for determining emission reductions be based on an installed and fully operational hour meter or that fuel logs or purchase receipts of fuel be kept. See 2005 Moyer Program Guidelines, Part II, Section VII.B at X-15, 2008 Moyer Program Guidelines, Part I, Section IV.(a).(9) at X-5, 2011 Moyer Program Guidelines, Part I, Section C.1.(F) at 10-3.

ARB requires that engines be certified (see 2005 Moyer Program Guidelines, Part II, Section IV.B.2 at X-6, 2008 Moyer Program Guidelines, Part I, Section IV.(a).(4) at X-5 and 2011 Moyer Program Guidelines, Part 1, Section C.1.(G-I) at 10-4). The guidelines clearly define alternative documentation and testing requirements when certification is unavailable. See 2005 Moyer Program Guidelines, Part II, Section V.C at X-11, 2008 Moyer Program Guidelines, Part I, Section IV.(b).(12) at X-7, 2011 Moyer Program Guidelines, Part 1, Section C.2.(I-K) at 10-6.

The requirements discussed in the “General Carl Moyer Enforceable” section along with the specific requirements discussed above, help ensure the integrity criterion for enforceability of Portable and Stationary Agricultural Sources Repower projects funded under the 2005, 2008, and 2011 Moyer Program Guidelines.

### Moyer Program Portable and Stationary Agricultural Sources Repower Quantifiable

As discussed in the “General Moyer Program Quantifiable” section, the following appendices to the Moyer Program Guidelines provide the methodology for calculating emission reductions from Portable and Stationary Agricultural Sources Repower projects, using hours of operation or fuel consumption as activity factors: Appendix C (2005, 2008, and 2011 Moyer Program Guidelines), Appendix B (2005 and 2008 Moyer Program Guidelines), and Appendix D (2011 Moyer Program Guidelines). Along with the usage data discussed in the “General Moyer Program Enforceable” section and the recordkeeping requirements discussed in the “Moyer Program Portable and Stationary Agricultural Sources Repower Enforceable” section above, these appendices allow for the reliable and replicable quantification of emission reductions.

### Moyer Program Portable and Stationary Agricultural Sources Repower Surplus

Most Portable and Stationary Agricultural Sources Repower projects are subject to regulation under the Stationary Engine Airborne Toxic Control Measure (ATCM), the Portable Engine ATCM, or District Rule 4702. As described in “General Moyer Program Surplus” section, regulated engines are not eligible for funding (also see 2008 Moyer

Program Guidelines, Part I, Table 10-1 at X-1 and Section III at X-3 and 2011 Moyer Program Guidelines, Part 1, Section C.1.(C) at 10-3. The 2008 and 2011 Moyer Program Guidelines “Fleet Rule Implementation Charts for use with the (2008) 2011 Moyer Program Guidelines” (Implementation Chart) document details the appropriate project lifetimes based on compliance deadlines by project type and year.

For projects where an existing engine is replaced by a natural gas engine or electric motor, the project life can extend beyond a compliance date. In this case the quantification protocol ensures that only surplus emission reductions are calculated. The Implementation Chart document specifies that the existing engine emissions should be used as a baseline until the compliance deadline. After which, the required Tier emission rate should be used as the baseline for the remainder of the project life.

The 2011 Moyer Program Guidelines, Part 1, Section C.1.(C)(2) at 10-3 states that in accordance with SBX2 3, portable farm equipment may be eligible for funding up to the compliance date on an applicable in-use rule and for up to a ten year project life. These projects are considered surplus until the compliance date.

The requirements in the “General Moyer Program Surplus” section, along with the specific requirements detailed above ensure the surplus nature of emission reductions achieved for Portable and Stationary Agricultural Sources Repower projects funded under the 2005, 2008, and 2011 Moyer Program Guidelines.

#### Moyer Program Portable and Stationary Agricultural Sources Repower Permanent

The following sections require that all engines replaced as part of a Portable and Stationary Agricultural Sources Repower project be destroyed consistent with the provisions discussed in the “General Moyer Program Permanent” section: 2005 Moyer Program Guidelines, Part II, Section V.E at X-3, 2008 Moyer Program Guidelines, Part I, Section IV.(b).13 at X-7, and 2011 Moyer Program guidelines, Part I, Section C.2.(L) at 10-8. In combination with contracting requirements discussed in the “General Moyer Program Permanent” section and the record keeping requirements in the “General Moyer Program Enforceable” section, these requirements ensure that emission reductions for Portable and Stationary Agricultural Sources Repower projects funded under the 2005, 2008, and 2011 Moyer Program Guidelines are permanent for the duration of the project life.

**Conclusion:** Relevant portions of 2005, 2008, and 2011 Moyer Program Guidelines establish clear criteria that enable the ARB to: (1) quantify the emission reductions attributed to specific projects with a reasonable level of accuracy; (2) verify that those emission reductions are “surplus” to federal/State requirements and other legal mandates; (3) enforce the conditions of program grants to ensure that contracted emission reductions are achieved; and (4) monitor the continuing implementation of program grants to ensure that emission reductions are “permanent” throughout the life of each project.

## ***D. Prop 1B On-Road Vehicle Replacement Projects***

### **Applicable guidelines:**

- Proposition 1B: Goods Movement Emission Reduction Program Final 2008 Guidelines for Implementation, Adopted February 28, 2008
- Proposition 1B: Goods Movement Emission Reduction Program Final 2010 Guidelines for Implementation, adopted March 25, 2010

**Duration of Emission Reductions:** Emission reductions must span the entire 2014 calendar year.

### **Background:**

California voters approved Proposition 1B in November 2006, authorizing the Legislature to appropriate \$1 billion in bond funding to ARB to reduce air pollution emissions and health risks from freight movement along California's priority trade corridors. See "Proposition 1B Program: Goods Movement Emission Reduction Program, Final 2013 Guidelines for Implementation," adopted January 25, 2013. The legislation that created the Program is codified in the California Health and Safety Code, section 39625 *et seq.*

By statute, Prop 1B can only fund emission reductions not otherwise required by law or regulation. ARB awards grants following the program guidelines to fund projects proposed by local agencies, including the District, that are involved in freight movement or air quality improvements associated with goods movement activities. ARB staff developed the initial Proposition 1B: Goods Movement Emission Reduction Program Guidelines for Implementation (Prop 1B Guidelines) in consultation with stakeholders, including: air districts, metropolitan planning organizations, port authorities, shipping lines, railroad companies, trucking companies, harbor craft owners, freight distributors, terminal operators, local port community advisory groups, community interest groups, and airports.

When the Board adopted the initial Prop 1B Guidelines in 2008, the Board directed ARB staff to reassess those Prop 1B Guidelines following each appropriation of funding. Updates to the Prop 1B Guidelines are based on evaluating advances in technology, changes in equipment costs, regulatory actions, demand for Prop 1B funds, and other new information that influences the design of project specifications. The process involves the release of a concept paper and workshops to obtain feedback from stakeholders.

### **Prop 1B On-Road Vehicle Replacement Project Enforceable**

2008 Prop 1B Program Guidelines specify requirements that each implementing District must comply with (e.g., pre-project and post-project inspections) and requirements that each grantee must be subject to (i.e., contract provisions including monitoring, recordkeeping, reporting requirements, and State/District enforcement provisions). See

2008 Prop 1B Guidelines, Chapter II.D.10 (Local Agency Project Grant Agreement), Chapter III.D.8 (Equipment Project Pre-inspection), Chapter III.D.10 (Equipment Project Contracts), Chapter IV.G (Equipment Project Non-Performance), and Appendices A and B (Recordkeeping and Reporting Requirements). For future emission reduction projections, a SIP must contain an enforceable State/District commitment to: (1) monitor, assess, and report on emission reductions achieved, and (2) adopt and submit substitute measures by a specific date, no later than the applicable Clean Air Act implementation deadline, if projected emission reductions don't occur.

Specific funding criteria established in the Prop 1B Guidelines ensure that emission reductions claimed for these projects will be independently verifiable and practicably enforceable consistent with U.S. EPA policy. The Board holds a noticed public hearing to consider recommendations for funding local agency projects. The Board's funding decisions become legally enforceable by ARB through executed grant agreements between ARB and the selected local agencies. The requirements for these grant agreements are in:

- Chapter II.D.10, *Local Agency Project Grant Agreement*, of the 2008 Prop 1B Guidelines
- Chapter II.E.10, *Local Agency Grant Agreement*, of the 2010 Prop 1B Guidelines

These chapters include requirements that the local agency complete equipment project pre-inspections and post-inspections. This requirement ensures that equipment information provided by the project owner is consistent with actual operating equipment and that the existing equipment is in working condition. Additional requirements for pre-inspections including verification of usage and requirements for photographic confirmation of the equipment are in:

- Chapter III.D.8, *Equipment Project Contracts*, of the 2008 Prop 1B Guidelines
- Chapter IV.A.10, *Equipment Project Pre-Inspections*, of the 2010 Prop 1B Guidelines
- Chapter III.D.14, *Equipment Project Post Inspection*, of the 2008 Prop 1B Guidelines
- Chapter IV.A.16, *Equipment Project Post-Inspections*, of the 2010 Prop 1B Guidelines

Prop 1B funding is obligated by the District for each project by contracts between the District and the equipment owner. The requirements for these contracts, which are legally enforceable by the District, are in:

- Chapter III.D.10, *Equipment Project Contracts*, of the 2008 Prop 1B Guidelines
- Chapter IV.A.11, *Equipment Project Contracts*, of the 2010 Prop 1B Guidelines

These sections of the Prop 1B Guidelines include general requirements for recordkeeping, reporting, audits, and other verification mechanisms that all project contracts must contain, including provisions requiring equipment owners to agree to the installation and use of an electronic monitoring device at any time during the contract term. Contract non-performance provisions per these sections of the Prop 1B Guidelines specify some of the actions that would constitute a breach of contract as well

as remedies for non-performance, including cancellation of the contract and recovery of all or a portion of program funds.

Additional requirements specific to truck replacements are in:

- 2008 Prop 1B Guidelines, Appendix A, *Trucks Serving Ports and Intermodal Rail Yards*, and Appendix B, *Other Heavy Duty Diesel Trucks*, Section C, *Recordkeeping Requirements*, Section D, *Annual Reporting Requirements*, and Section E, *Ongoing Evaluation and Audits*.
- 2010 Prop 1B Guidelines, Appendix A, *Heavy Duty Diesel Trucks*, Section E, *Post-Inspection*, Section F, *Recordkeeping Requirements*, and Section G, *Annual Reporting Requirements*.

Annual reporting requirements for heavy duty diesel replacement projects in these portions of the Prop 1B Guidelines include but are not limited to:

- Current odometer reading, including the date read.
- Certification of annual California vehicle miles travelled (VMT) since last report.
- Certification of the required percent operation in California.
- Certification of at least 50 percent of travel within the four California trade corridors as well as the percentage of annual VMT in the Central Valley trade corridor.

Finally, failure to comply with the terms of a project contract may result in:

- Recovery of all or a portion of program funds.
- Other fiscal penalties on equipment owners based on the severity of the nonperformance.
- Cancellation of the contract.
- A ban on the equipment owner's ability to participate in future State incentive programs.

Non-performance requirements prohibiting a specific piece of equipment from participating in another State incentive program are found in:

- Chapter IV.G, *Equipment Project Non-Performance*, 2008 Prop 1B Guidelines
- Chapter VI.I, *Equipment Project Non-Performance*, 2010 Prop 1B Guidelines

These criteria for on-road vehicle replacement projects funded through the 2008 and 2010 Prop 1B Guidelines ensure that actions required of grantees are independently verifiable; program violations are defined; those liable can be identified; and the District may apply penalties and secure appropriate corrective action where applicable. Additionally, the public and U.S. EPA will have access to all emissions-related information obtained from the sources. These provisions adequately meet the enforceability criterion as defined in U.S. EPA guidance.

#### Prop 1B On-Road Vehicle Replacement Project Quantifiable

2008 Prop 1B Program Guidelines require the use of well-established, publicly available emission factors and calculation methods – *i.e.*, emission reduction “quantification

protocols.” See 2008 Prop 1B guidelines, Chapter II.C.2.b (Project Benefits Calculator) and associated “directions document,” available at [http://www.arb.ca.gov/bonds/gmbond/docs/prop\\_1b\\_goods\\_movement\\_2008-09\\_calculator\\_directions.pdf](http://www.arb.ca.gov/bonds/gmbond/docs/prop_1b_goods_movement_2008-09_calculator_directions.pdf).

The Prop 1B Program Guidelines direct ARB staff to develop and make publicly available a “Project Benefits Calculator” to determine the emission reductions achieved by funded projects. See 2008 and 2010 Prop 1B Guidelines, Chapter II.C.2.b, Project Benefits Calculator. According to the “directions” document for this Project Benefits Calculator (“Directions Document”), emission factors for diesel heavy-duty trucks are based on in-use testing of Class 7 and Class 8 diesel trucks. See Directions Document at p. 7. The emission factors are the same ones used for the California On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation and used in EMFAC2011, which U.S. EPA has approved for use in California SIPs and transportation conformity demonstrations (78 FR 14533, March 6, 2013). The publicly available Project Benefits Calculator uses vehicle miles traveled, which must be recorded and reported as explained above in the “Prop 1B Enforceable” section, together with emission factors obtained from the On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation, to determine emissions. See Directions Document at pp. 4-7. Existing vehicle usage is based on vehicle activity data for the past two years. See 2008 Prop 1B Guidelines, Appendices A and B, Section F, Application Information; 2010 Prop 1B Guidelines, Appendix A, Section C, Application Information.

By providing for well-established, publicly available emission factors and calculation methods and requiring that grantees record and report activity data to the District on an annual basis, the 2008 and 2010 Prop 1B Guidelines ensure that emission reductions from on-road vehicle replacement projects funded through these guidelines can be determined using reliable and replicable methods. These provisions adequately meet the criterion for emission reductions to be “quantifiable,” as defined in U.S. EPA guidance.

#### Prop 1B On-Road Vehicle Replacement Project Surplus

2008 Prop 1B Program Guidelines prohibit the use of funds for any project required by federal, State, or local requirement or other legal mandate. See 2008 Prop 1B Guidelines, Chapter III.B.1 (Legal Restrictions). Also, local agency pre-inspection requirements ensure that the unit to be replaced is still in useable form and would not have been replaced by normal fleet turnover. See 2008 Prop 1B Guidelines, Chapter II.D.10 (Local Agency Project Grant Agreement), Chapter III.D.8 (Equipment Project Pre-inspections). The SIP relies on incentive-based emission reductions during the timeframe that is consistent with “project life.” See 2008 Prop 1B Guidelines, Chapter III.D.10 (Equipment Project Contracts).

Prop 1B Guidelines explicitly state that “local agencies shall certify that the local agency project would achieve emission reductions not otherwise required by law or regulation,” which means that “the emission reductions are not required pursuant to any local, State,



or federal law, rule, or regulation; any requirements imposed by the California Environmental Quality Act; or any requirements imposed by a legal instrument such as a legal settlement or consent decree (collectively referred to as 'law or regulation').” See Chapter III.B.1, Legal Restrictions, of the 2008 and 2010 Prop 1B guidelines.

Recordkeeping, reporting and application requirements described above in the “Prop 1B Enforceable” and “Prop 1B Quantifiable” sections ensure that historic and future emission estimates correctly represent emissions occurring in the San Joaquin Valley. Pre-inspection requirements discussed above in the “Prop 1B Enforceable” section ensure that the unit to be replaced is still in useable form and thus would not have been replaced by normal fleet turnover. These requirements ensure that emission reductions from normal fleet turnover that have already been accounted for in the future baseline emission inventories underlying a SIP attainment demonstration are not treated as surplus.

These provisions ensure that emission reductions attributed to On-Road Vehicle Replacement projects funded through the Prop 1B 2008 and 2010 Guidelines are not required by any existing regulation or other legal mandate and are not accounted for in the future baseline inventories underlying a SIP. These provisions adequately meet the criterion for emission reductions to be “surplus,” as defined in U.S. EPA guidance.

#### Prop 1B On-Road Vehicle Replacement Project Permanent

2008 Prop 1B Program Guidelines specify requirements to (1) demonstrate that both the replaced (old) and replacement (new) equipment are used similarly in the nonattainment area, and (2) document the destruction of the replaced equipment. Also, required contract provisions enable U.S. EPA and the public to identify the timeframe during which the State/District attributes emission reductions to a particular project and to determine whether that timeframe adequately covers the period for which the reductions are relied upon in a SIP. See 2008 Prop 1B Guidelines, Chapter III.D.13 (Equipment Project Scrap Requirements), Chapter II.D.10 (Local Agency Project Grant Agreement), Section III.D.8 (Equipment Project Contracts), and Chapter III.d.10 (Equipment Project Contracts).

For Prop 1B truck replacement projects, two key types of requirements ensure that emission reductions are “permanent” for the life of the project: (1) requirements to demonstrate that both replaced (old) and replacement (new) equipment are used similarly in the San Joaquin Valley, and (2) requirements to document the destruction of the replaced equipment. The Prop 1B Guidelines require that the local agency ensure that old equipment is scrapped. The following sections delineate the procedures that must be implemented for all replacement projects, which include specifics of how the units shall be destroyed and documentation requirements to demonstrate that the unit replaced was destroyed:

- Chapter III.D.13, *Equipment Project Scrap Requirements*, of the 2008 Prop 1B Guidelines
- Section IV.A.14, *Equipment Project Scrap Requirements*, of the 2010 Prop 1B Guidelines

Additional scrapping requirements specific to each project option are in Section D, *Scrap Requirements*, of Appendix A of the 2010 Prop 1B Guidelines. The information in these tables for the 2010 Prop 1B Guidelines is included in Chapter III.D.13 for the 2008 Prop 1B Guidelines.

Recordkeeping and reporting requirements discussed in the “Prop 1B Enforceable” section above (e.g., requirements to certify that at least 50 percent of travel is within the four California trade corridors and to provide the percentage of annual VMT in the Central Valley trade corridor) provide further documentation of the emission reductions from a Prop 1B truck replacement project which occur in the San Joaquin Valley. Finally, both the 2008 and 2010 Prop 1B Guidelines require that each equipment project contract identify a “term of contract,” *i.e.*, the project completion time plus the “equipment project life.” See 2008 Prop 1B Guideline at Chapter III.D.10 (“Equipment project contracts”) and 2010 Prop 1B Guideline at Chapter IV.A.11 (“Equipment project contracts”). The term “equipment project life” is defined in both Prop 1B Guidelines as “the length of time an equipment owner is obligated (under an equipment project contract) to maintain and operate the bond-funded equipment according to the requirements of the Prop 1B Program.” See 2008 and 2010 Prop 1B Guidelines at table 1.4 (definitions). These contract provisions enable U.S. EPA and the public to evaluate the duration for which the District attributes emission reductions to a particular project and to determine whether that duration adequately covers the period for which the reductions are relied upon in a SIP. These provisions adequately meet the criterion for emission reductions to be “permanent,” as defined in U.S. EPA guidance.

**Conclusion:** Relevant portions of the 2008 and 2010 Prop 1B guidelines establish clear criteria that enable the ARB to: (1) quantify the emission reductions attributed to specific projects with a reasonable level of accuracy; (2) verify that those emission reductions are “surplus” to federal/State requirements and other legal mandates; (3) enforce the conditions of program grants to ensure that contracted emission reductions are achieved; and (4) monitor the continuing implementation of program grants to ensure that emission reductions are “permanent” throughout the life of each project.

## V. EMISSION REDUCTIONS

Incentive-based emission reduction measures were identified in the SJV PM2.5 Plan as one mechanism for fulfilling ARB’s aggregate emissions reduction commitment for meeting the 2014 attainment target. This Report documents the quantified emission reductions from these ARB and District-administered incentive projects.

ARB used the Carl Moyer Program Clean Air Reporting Log of Moyer Program projects and Goods Movement Online Database of Prop 1B projects to determine the list of SIP-creditable projects. These are the official Statewide databases for these programs.

Only those projects with a completed post-inspection as of December 31, 2013, and that will produce surplus emission reductions through the entire 2014 calendar year were included. From these lists, ARB selected a subset of project types described in Section IV of this Report:

- Off-road equipment repower, replacement, and retrofit projects using 2005, 2008, and 2011 Moyer Program Guidelines
- Portable and stationary agricultural source projects using 2005, 2008, and 2011 Moyer Program Guidelines
- On-road vehicle replacement projects using 2008 and 2011 Prop 1B Guidelines

Contingency emission reductions are required to be held in reserve and cannot be counted towards attainment. Therefore, to ensure that the identified projects are surplus in this specific context, this preliminary list was then cross-referenced by project identification number to the list of projects that were approved for 2015 attainment contingency purposes in *Attachments A and B* in *U.S. EPA's Technical Support Document for its Proposed Approval of Clean Air Act Section 172(c)(9) Contingency Measures in the San Joaquin valley State Implementation Plan for Attainment of the 1997 PM<sub>2.5</sub> Standards*, dated August 15, 2013. These contingency projects were originally selected from the list in the District's 2013 Annual Demonstration Report. All projects that appeared in both the preliminary project list and the contingency project list were then removed from the list of SIP-eligible projects to be credited. Appendix H includes a list of incentive projects with associated emission reductions that follow the approved incentive program guidelines, meet U.S. EPA's integrity elements, and are therefore SIP eligible.

The cumulative emission reductions from Moyer Program projects listed in Appendix H in the San Joaquin Valley are in Table 1. Table 2 contains emission reductions achieved with Prop 1B projects listed in Appendix H in the San Joaquin Valley. The total emission reductions from the ARB incentive-based emission reduction measures for which ARB is requesting U.S. EPA credit towards the 2014 State aggregate commitment in the San Joaquin Valley are in Table 3.

**Table 1: 2014 Moyer Program Emission Reductions Achieved in the San Joaquin Valley**

Source Category	Technology	Guideline Year	Emission Reductions (tpd)	
			NOx	PM2.5
Off-Road Equipment - Construction	Repower	2005	0.03	0.00
Off-Road Equipment - Construction	Retrofit	2008	0.00	0.00
Off-Road Equipment - Mobile Agricultural	Replacement	2011	0.21	0.01
Off-Road Equipment - Mobile Agricultural	Repower	2005	0.13	0.00
Off-Road Equipment - Mobile Agricultural	Repower	2008	0.13	0.00
Off-Road Equipment - Mobile Agricultural	Repower	2011	0.12	0.00
Stationary and Portable Agricultural Engines	Repower	2005	2.68	0.06
Stationary and Portable Agricultural Engines	Repower	2008	0.13	0.00
Stationary and Portable Agricultural Engines	Repower	2011	0.02	0.00
<b>TOTAL</b>			<b>3.5</b>	<b>0.1</b>

Totals may not add up due to rounding.

**Table 2: 2014 Prop 1B Emission Reductions Achieved in the San Joaquin Valley**

Source Category	Technology	Guideline Year	Emission Reductions (tpd)	
			NOx	PM2.5
Heavy Duty Diesel Truck	Replacement	2010	2.74	0.08
Other Heavy-Duty Diesel Trucks	Replacement	2008	1.64	0.06
<b>TOTAL</b>			<b>4.4</b>	<b>0.1</b>

**Table 3: Total 2014 Incentive-Based Emission Reductions**

Incentive-Based Emission Reduction Measure	2014 Emission Reductions (tpd)	
	NOx	PM2.5
Moyer Program	3.5	0.1
Prop 1B	4.4	0.1
<b>TOTAL</b>	<b>7.8</b>	<b>0.2</b>

Totals may not add up due to rounding.

## **VI. RECOMMENDATION**

Staff recommends that the Board approve the Report on Reductions Achieved From Incentive-Based Emission Reduction Measures in the San Joaquin Valley and direct staff to submit it to U.S. EPA for inclusion in the California SIP as the mechanism to allow California to receive SIP credit for reductions achieved through these emission reduction measures.